

224



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10/023,338	12/18/2001	Trevor G.R. Hall	GB 000184	7989

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EXAMINER

TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

RR4

# Office Action Summary

Application No.

10/023,338

Applicant(s)

HALL ET AL.

Examiner

Joseph D. Torres

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/18/2001.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-10 and 13-15, drawn to A Method for Accessing Data Blocks of Data Containing Error Correction Code by Dividing the Blocks into Sub-Blocks and Reading a Series of Sub-Block to produce Syndromes, classified in class 714, subclass 785.
  - II. Claims 11 and 12, drawn to An Optical Portion for Reading Data Encountered by Beams, classified in class 714, subclass 769.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I, A Method for Accessing Data Blocks of Data Containing Error Correction Code by Dividing the Blocks into Sub-Blocks and Reading a Series of Sub-Block to produce Syndromes, and Group II, An Optical Portion for Reading Data Encountered by Beams, are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process Group I, A Method for Accessing Data Blocks of Data Containing Error Correction Code by Dividing the Blocks into Sub-Blocks and Reading a Series of Sub-Block to produce Syndromes, can be used in other volatile or

Art Unit: 2133

non-volatile memories such as Flash memory and the apparatus Group II, An Optical Portion for Reading Data Encountered by Beams, can be used in any error correcting scheme not necessarily the error correcting scheme taught in claim 1 of Group I.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Michael Ure on 06 April 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-10 and 13-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11 and 12 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: '712' in Figure 7. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it exceeds 150 words in length and references to the drawings should be removed. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

4. Claims 13-15 are objected to because of the following informalities: Claims 13-15 are not written in proper dependant form.

The Examiner suggests the following revision to claim 13: --A method as claimed in claim 1 for use in an apparatus for reproducing data stored on a record carrier, the apparatus comprising disc transport means including a pickup for reading data from the carrier, signal processing means for recovering data from the carrier and a decoder for decoding and error-correcting the data read from the carrier, in accordance with error correcting codes included therein, wherein the pickup is adapted for reading multiple-

channels in parallel to recover plural sub-sequences of a first sequence of data recorded on the carrier.--

The Examiner suggests the following revision to claim 14: -- A method as claimed in claim 1 for use in a decoder comprising input means for receiving in parallel plural sub-sequences of a first sequence of data to be decoded. --.

The Examiner suggests the following revision to claim 15: -- A method as claimed in claim 14 wherein the decoder comprises an integrated circuit including inner and outer correction error correctors, and buffers for the storage of at least one outer error correction syndrome per channel, and means for transferring a partial syndrome to external memory after encountering the end of a block of data. --.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-10 and 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "each error protection block" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "said block or sub-block boundaries" in line 7. There is insufficient antecedent basis for this limitation in the claim. Note: it is not clear what block "said block" is referring to.

Claim 1 recites the limitation "the group of N sub-sequences" in lines 7-8. There is insufficient antecedent basis for this limitation in the claim. Note: it is not clear what block "said block" is referring to.

Claim 1 recites the limitation "said block" in line 13. There is insufficient antecedent basis for this limitation in the claim. Note: it is not clear what block "said block" is referring to.

Claim 1 recites the limitation "said block" in line 14. There is insufficient antecedent basis for this limitation in the claim. Note: it is not clear what block "said block" is referring to.

Claim 1 recites the limitation "in another of said subsequences" in lines 16-17. There is insufficient antecedent basis for this limitation in the claim. Note: in step a, N subsequences are introduced and in step c, a series of sub-blocks is identified within each of the N subsequences, hence it is impossible to determine what "another of said subsequences" refers to.

Claim 1 recites the limitation "the block" in line 17. There is insufficient antecedent basis for this limitation in the claim. Note: it is not clear what block "said block" is referring to.

Claim 1 recites the limitation "said sub-blocks" in line 18. There is insufficient antecedent basis for this limitation in the claim. Note: the preamble introduces sub-



Art Unit: 2133

blocks in line 4, step b again introduces sub-blocks in line 10, step d introduces sub-blocks in line 17; it is not clear what sub-blocks "said sub-blocks" in line 18 refers to nor is it clear whether the sub-blocks in lines 4, 10 and 17 are related to each other or not. Claims 2-10 and 13-15 depend from claim 1 hence inherit the deficiencies of claim 1. Claim 1 recites the limitation "said syndrome" in line 19. There is insufficient antecedent basis for this limitation in the claim. Note: it is not clear what block "said syndrome" is referring to, the syndrome in step c or the partial error protection syndrome in lines 12-13.

Claims 1-10 and 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between a first sequence and an error protection block.

Claims 1-10 and 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between a first sequence and subsequences.

Claims 1-10 and 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between an error protection block and subsequences.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between "a new set of locations" and "a first sdequence".

Note: The preceding deficiencies make step c in claim 1 incomprehensible. Note: the claim language only indicates that subsequences are made up of a series of sub-blocks of a portion of an error protection block. In addition, since a sub-block is a block, it is not clear whether "said block" in line 14 refers to the sub-blocks or some other block. The Examiner assumes the following was intended for step c: --(c) Upon reaching the end of said sub-block, accumulating a syndrome for a next sub-block within the sub-sequence--.

Claims 2-10 and 13-15 depend from claim 1 hence inherit the deficiencies of claim 1.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. The Examiner has attempted to point out a few of the errors in the claim language. The claims must be revised and all errors must be removed from the claim language. The Examiner would like to point out that a Prior Art rejection is provide below based on the Examiner's best attempt to interpret the claim language for the purposes of speeding up prosecution.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-10 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipate by Patel; Arvind M. (US 4205324 A).

35 U.S.C. 102(b) rejection of claims 1-10 and 13-15.

Patel teaches a method of reproducing data recorded in a first sequence, the data incorporating an error protection code applied on the basis of a predetermined size of data block, each error protection block comprising a series of several sub-blocks (Figure 2C in Patel is an error correction block that is derived from a first data information sequence to be recorded onto parallel tracks of a magnetic device in a time-ordered

Art Unit: 2133

sequence; Note a byte is a sub-block so that  $B_1, B_2 \dots B_{M-1}$  in Figure 2C of Patel are sub-blocks), the method comprising the following steps: (a) Reading in parallel a set of  $N=8$  sub-sequences starting at  $N=8$  respective locations within said first sequence, said locations being chosen without restriction to said block or sub-block boundaries, the group of  $N=8$  sub-sequences encompassing a contiguous portion of the first sequence (Figure 4 in Patel is a device for reading in parallel a set of  $N=8$  sub-sequences starting at  $N=8$  respective locations within said first sequence, said locations being chosen without restriction to said block or sub-block boundaries, the group of  $N=8$  sub-sequences encompassing a contiguous portion of the first sequence: Note: sub-blocks  $B_1, B_2 \dots B_{M-1}$  in Figure 2C of Patel are read according to index values  $i, k$ , for a single bit  $B_i(k)$  of a block  $B_i$  independently of block or sub-block boundaries); (b) During said reading step, identifying within each sub-sequence a series of sub-blocks forming a part of a data block and, in the absence of data from the start of the block, processing the series of sub-blocks in accordance with predetermined rules to accumulate a partial error protection syndrome relating to said block (Each of the parallel lines in Figure 4 of Patel reads in a subsequence of 9 bits to form a diagonal partial error protection syndrome, e.g., line 0 reads in sub-block  $B_m(0)-B_{m+8}(0)$ ); (c) Upon reaching the end of said sub-block, accumulating a syndrome for a next sub-block within the sub-sequence (when the end of a sub-block  $B_m(0)-B_{m+8}(0)$  is reached, a syndrome is passed on and a next block is read in so that a syndrome for the next block can be accumulated in FF1); (d) During said reading step subsequently identifying in said sub-sequences a series of sub-blocks forming a starting part of the block whose end part has been processed and

Art Unit: 2133

processing said sub-blocks to accumulate the remainder of said syndrome ( $B_m$  is a sequence that is identified as forming a starting part of the block whose end part  $B_{m+8}$  has been processed to accumulate the remainder of the modified syndromes in Figure 4); and (e) combining the remainder of said syndrome with the stored partial syndrome so as to obtain a complete syndrome for the block (Shift registers 24 and AND-OR gate 26 is used to combine the remainder of said syndrome with the stored partial syndrome so as to obtain a complete syndrome for the block).

### ***Conclusion***

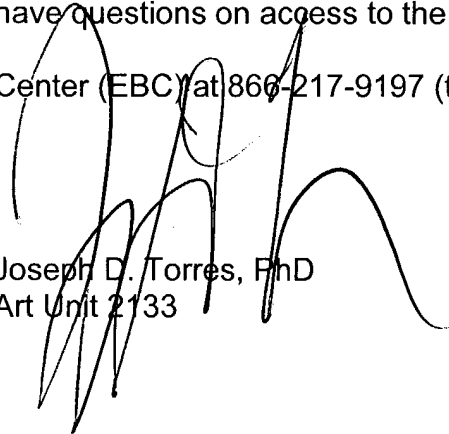
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pharris; Kenton J. (US 5577054 A) teaches a receiver and decoding method which perform, error detection on an interleaved signal portion.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2133

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD  
Art Unit 2133